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SUPPLEMENT TO REPORT NO. 25X1

THIS IS UNEVALUATED INFORMATION 25X1

1. The available equipment at Scientific Research Institute No. 885 (NII-885) in Novaya for the development of the Wolman method of trajectory tracing included a ground transmitter set equipped with an LS-500 power tube. This transmitter had been constructed in Bleicherode, Germany, and was to be used for tests with aircraft. At NII 885, the Soviets prohibited the utilization of this set and demanded the development of a three-meter transmitter set with Soviet-produced parts only. The airborne Ortler sets available at the Institute were also converted to a wave length of three meters. The Ortler devices received ground waves and reflected them back with doubled frequencies. The Wolman method worked with three ground receivers which, arranged in a triangle, receive the doubled frequencies reflected by the Ortler set and the direct waves from the ground transmitters. In an early stage of development, the three beats obtained by this system were to be recorded by a string oscillograph set in the center of the triangle formed by the three transmitters. However, the records obtained by this set would have been very extensive and hard to evaluate. When the development had reached a more advanced status, the Germans were excluded from the project. The Soviets, on principle, were able to handle the Wolman method themselves. 25X1 German experts were consulted after the Soviets continued the project without their help.

2. The ground transmitter set, which was also converted to work on a wave length of three meters, was equipped with a Soviet-built RCA tetrode. Soviet engineers from Leningrad who had reconstructed this tube inspected the transmitter and were amazed that the Germans had achieved 80 percent of the efficiency indicated by the RCA catalogue.

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3. The guide beams for remote-controlled rockets were produced in accordance with the Hawaii method, which was developed with captured German equipment. The position of the guide beam was controlled by a control station located several kilometers from the transmitter, in the direction of the target at a geodetically determined point. The key modulation received by the control station was transmitted by a line back to the transmitter station and recorded there. Dr. Werner Wilhelm Buschbeck developed the so-called "V" set, a phase modulation unit which facilitated the exact adjustment of the guide beam. By controlling the phase in the transmitter lines for high frequencies between the transmitter and the two horizontal dipoles set up at a distance of 3λ, the "V" set was able to shift slightly the location of the guide beam. This instrument was the only improvement on the Hawaii method which the German experts could introduce. The project was continued without German assistance. Flight experiments to test the course of the guide beams were not observed.

4. The activities of the German experts at Special Bureau No. 1 in Monino included the construction of the antenna and the mixer. The dipole of the antenna was a copper foil which was glued to a trolitul disc, about six cm in diameter. The disc was driven by an induction motor via about a 20 cm long shaft, and rotated at 30,000 rpm. The material of the disc, therefore, had to be of uniform solidity. Because of the lack of precision lathes, difficulties were met in the production of the shaft and the bedding of the shaft. These difficulties were finally overcome by the construction of a shaft with a high degree of stability. The dipole was fitted in a parabolic mirror, about 25 cm in diameter and about ten cm deep. A line which was capacitively connected to the dipole led to the mixer, a solid hemispherical-shaped device, about ten cm in diameter. For better stability of the mixer, all parts were fitted into holes bored into the hemispherical-shaped housing. The research designation of the mixer was "Bergwerk". Following a suggestion of Dr. Buschbeck, the cable which transmitted the oscillator frequency to the mixer was also used to branch off the intermediate frequency. At first, the mixers were manfactured only of captured German parts, including silicon detectors of the Korfu device and type SA 100 and SA 101 doorknob tubes. By the end of 1950, Soviet detectors and doorknob tubes of an equally good quality were available.

25X1 [redacted] the sensitivity of the mixer, which was measured by a calibrating transmitter. The degree of sensitivity might be concluded from an experiment which was performed in September 1950 when the rotatable device started to adjust itself to the target, a twin-engine aircraft, which was picked up by an American SCR-584 set, flying at an altitude of 700 to 800 meters at a distance of about 20 kilometers from the set. Two high radio towers east of Monino were often used as target points.

5. The only radio tubes which were available on the civilian market were one year to one and a half years old. A television set, a large radio, and a portable record player cost 2,000 rubles, 1,500 rubles, and 600 rubles respectively.

6. Broadcasts in the German language and musical programs by the medium wave radio station RIAS were generally clear and understandable. These programs were also heard by many Soviets, who generally knew enough German because they had learned it starting with the second or third year at school. The reception of programs in the Russian language was impossible because they were jammed three minutes after they had started.

7. The suburban railroad between Sortirovchnaya and Ramenskoye was enlarged to a four track railroad line and put into operation in summer 1948. A very large heating plant or thermal power plant was located just east of the new Novaya suburban railroad station, which was located about five minutes from the Institute.

Attachments: Two
1. List of personalities at NII 885 and Special Bureau No. 1.
2. Location sketch of NII 885.

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Attachment 1

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NII 885

Soviet Chiefs

1. Ryazanskiy not Ryanskiy.
2. Boguslavskiy (fnu), was in Germany after the war.

German Work Groups

Group Radar Train (FMS)

Engineer Alois Fleischer, who was previously released with experts from Institute No. 160 in Fryazino.

Special Bureau No. 1

Soviet Chiefs

1. Miron Zalomonovich Kashnitskiy.
2. Kroll (fnu), last director.

German Work Groups

Group for Target Finding Equipment

Hasenrodt, not Hasseroth.

Workshop

Fritz Fiedler, chief of the workshop, was released.
Rosin (fnu), foreman of the electrical department.

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Attachment 2

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